MultiSync LCD1970VX
MultiSync LCD1970NX
MultiSync LCD1970NXp

User's Manual

NEC

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WARNING

TO PREVENT FIRE OR SHOCK HAZARDS, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE. ALSO, DO NOT USE THIS UNIT'S POLARIZED PLUG WITH AN EXTENSION CORD RECEPTACLE OR OTHER OUTLETS UNLESS THE PRONGS CAN BE FULLY INSERTED.

REFRAIN FROM OPENING THE CABINET AS THERE ARE HIGH VOLTAGE COMPONENTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

CAUTION

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, MAKE SURE POWER CORD IS UNPLUGGED FROM WALL SOCKET. TO FULLY DISENGAGE THE POWER TO THE UNIT, PLEASE DISCONNECT THE POWER CORD FROM THE AC OUTLET.DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol warns user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any part inside this unit.

This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully in order to avoid any problems.

Caution:

When operating the MultiSync LCD1970VX/MultiSync LCD1970NX/MultiSync LCD1970NXp with a 220-240V AC power source in Europe, use the power cord provided with the monitor.

In the UK, a BS approved power cord with a moulded plug has a Black (five Amps) fuse installed for use with this equipment. If a power cord is not supplied with this equipment please contact your supplier.

When operating the MultiSync LCD1970VX/MultiSync LCD1970NX/MultiSync LCD1970NXp with a 220-240V AC power source in Australia, use the power cord provided with the monitor. If a power cord is not supplied with this equipment please contact your supplier.

For all other cases, use a power cord that matches the AC voltage of the power outlet and has been approved by and complies with the safety standard of your particular country.

Declaration

Declaration of the Manufacturer

We hereby certify that the colour monitor MultiSync LCD1970VX (L194RK)/MultiSync LCD1970NX (L194RH)/MultiSync LCD1970NXp (L194RH) are in compliance with

Council Directive 73/23/EEC:
- EN 60950-1

Council Directive 89/336/EEC:
- EN 55022
- EN 61000-3-2
- EN 61000-3-3
- EN 55024

and marked with

CE

NEC Display Solutions, Ltd.
4-13-23, Shibaura,
Minato-Ku
Tokyo 108-0023, Japan

ENERGY

Windows is a registered trademark of Microsoft Corporation. NEC is a registered trademark of NEC Corporation. ENERGY STAR is a U.S. registered trademark.
OmniColor is a registered trademark of NEC Display Solutions Europe GmbH in the countries of EU and Switzerland.
ErgoDesign is a registered trademark of NEC Display Solutions, Ltd. in Austria, Benelux, Denmark, France, Germany, Italy, Norway, Spain, Sweden and U.K.
NaViSet is a trademark of NEC Display Solutions Europe GmbH in the countries of EU and Switzerland.
MultiSync is a registered trademark of NEC Display Solutions, Ltd. in the countries of U.K., Italy, Austria, Netherlands, Switzerland, Sweden, Spain, Denmark, Germany, Norway and Finland.
All other brands and product names are trademarks or registered trademarks of their respective owners.
As an ENERGY STAR® Partner, NEC Display Solutions of America, Inc. has determined that this product meets the ENERGY STAR guidelines for energy efficiency. The ENERGY STAR emblem does not represent EPA endorsement of any product or service.

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Canadian Department of Communications Compliance Statement

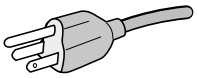
DOC: This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

C-UL: Bears the C-UL Mark and is in compliance with Canadian Safety Regulations according to CAN/CSA C22.2 No. 60950-1.

FCC Information

1. Use the attached specified cables with the MultiSync LCD1970VX (L194RK)/MultiSync LCD1970NX (L194RH)/ MultiSync LCD1970NXp (L194RH) colour monitor so as not to interfere with radio and television reception.

   (1) The power supply cord you use must have been approved by and comply with the safety standards of U.S.A., and meet the following condition.

Power supply cord Length Plug shape	Non shield type, 3-conductor 2.0 m  U.S.A

   (2) Please use the supplied shielded video signal cable. Use of other cables and adapters may cause interference with radio and television reception.

2. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

   - Reorient or relocate the receiving antenna.
   - Increase the separation between the equipment and receiver.
   - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
   - Consult your dealer or an experienced radio/TV technician for help.

   If necessary, the user should contact the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet, prepared by the Federal Communications Commission, helpful: “How to Identify and Resolve Radio-TV Interference Problems.” This booklet is available from the U.S. Government Printing Office, Washington, D.C., 20402, Stock No. 004-000-00345-4.

Declaration of Conformity

This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions. (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

U.S. Responsible Party: **Address:** **Tel. No.:**	**NEC Display Solutions of America, Inc.** **500 Park Blvd, Suite 1100** **Itasca, Illinois 60143** **(630) 467-3000**
Type of Product:	Display Monitor
Equipment Classification:	Class B Peripheral
Model:	MultiSync LCD1970VX (L194RK)/MultiSync LCD1970NX (L194RH)/ MultiSync LCD1970NXp (L194RH)

We hereby declare that the equipment specified above conforms to the technical standards as specified in the FCC Rules.

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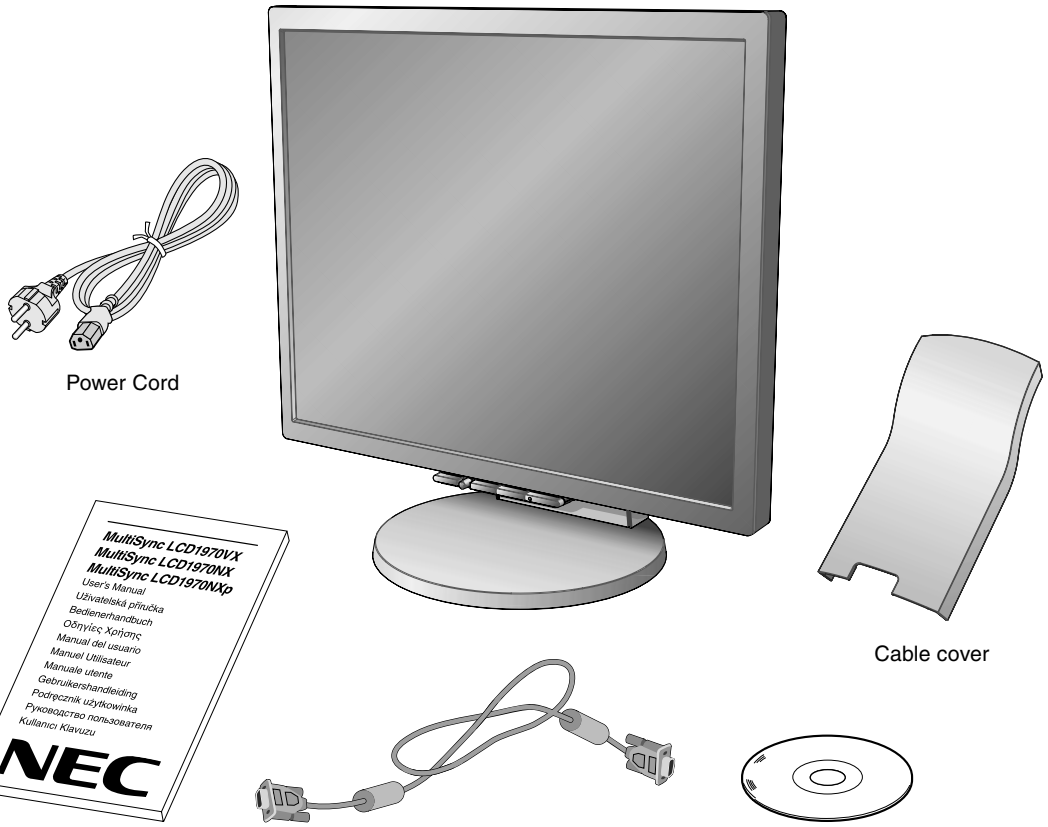
Contents

Your new NEC MultiSync LCD monitor box* should contain the following:

- MultiSync LCD monitor with tilt/swivel/height adjust stand
- Power Cord
- Cable cover
- Video Signal Cable (15-pin mini D-SUB male to 15-pin mini D-SUB male)
- User's Manual
- CD ROM (includes complete User's Manual in PDF format).
  To see the User's Manual, Acrobat Reader 4.0 or higher must be installed on your PC.



Power Cord

Cable cover

User's Manual

15-pin mini D-SUB male to
15-pin mini D-SUB male

CD-ROM

NOTE: This monitor can be equipped with optional loudspeakers: "MultiSync Sound bar". Please ask your dealer or check our website http://www.nec-display-solutions.com

* *Remember to save your original box and packing material to transport or ship the monitor.*

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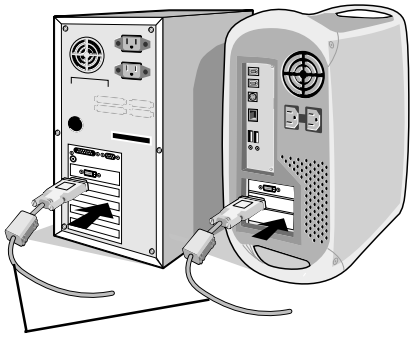
Quick Start

To attach the MultiSync LCD monitor to your system, follow these instructions:

1. Turn off the power to your computer.
2. **For the PC or MAC with DVI digital output:** Connect the DVI signal cable (not included) to the connector of the display card in your system (**Figure A.1**). Tighten all screws.

   For the PC with Analog output: Connect the 15-pin mini D-SUB signal cable to the connector of the display card in your system (**Figure A.2**). Tighten all screws.

   For the MAC: Connect the Macintosh cable adapter to the computer, then attach the 15-pin mini D-SUB signal cable to the Macintosh cable adapter (**Figure B.1**). Tighten all screws.



DVI signal cable
(not included)

Figure A.1

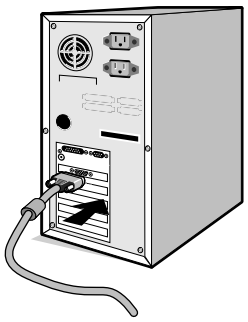
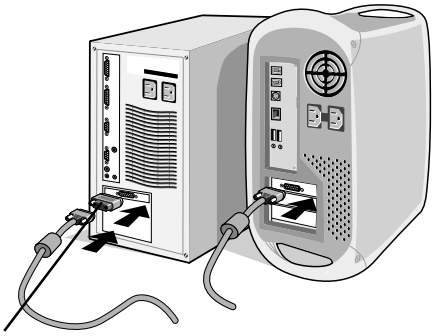


Figure A.2



Macintosh
Cable Adapter
(not included)

Figure B.1

NOTE: Some Macintosh systems do not require a Macintosh cable adapter.

3. Place hands on each side of the monitor to tilt the LCD panel 30-degree angle and lift up to the highest position (**Figure C.1**).
4. Connect all cables to the appropriate connectors (**Figure C.1**).
5. Place power cord into the specific hooks indicated in **Figure C.2**.
6. Place the D-Sub into the specific hooks indicated in **Figure C.2**.

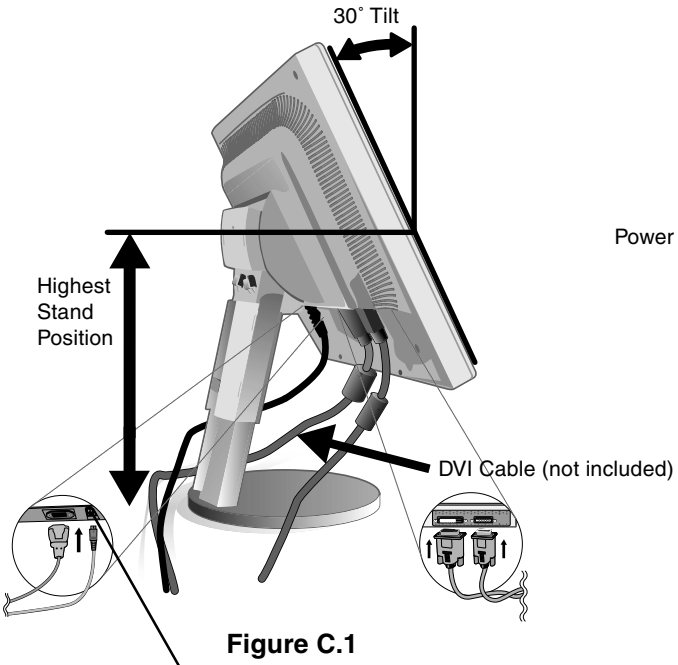


Figure C.1

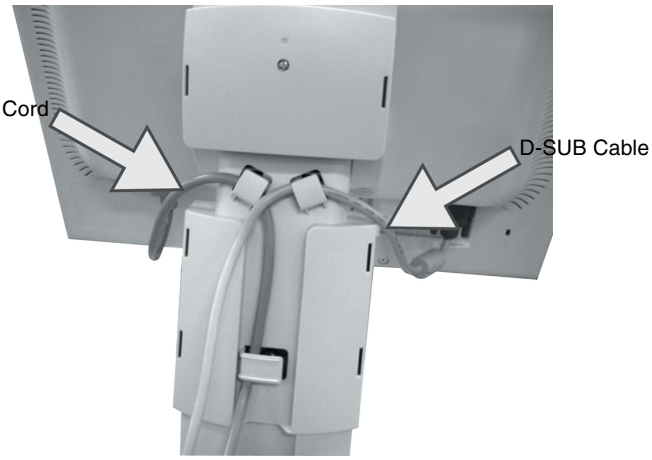


Figure C.2

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7. Place the DVI cable into the specific hooks indicated in **Figure C.3**.
8. Make sure all cables are resting flat against the stand (**Figure C.3**).

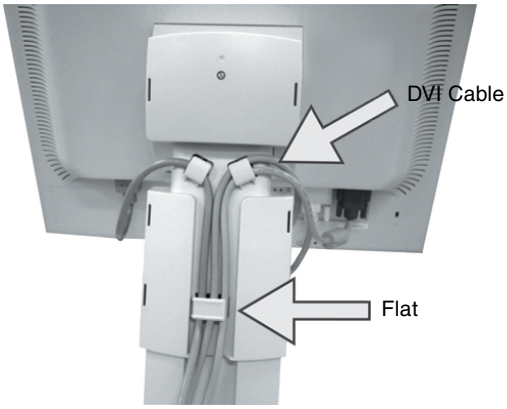

Figure C.3

9. Hold the all cables firmly and place the cable cover onto the stand (**Figure D.1**). To remove the cable cover, lift the cover off as shown in **Figure D.2**.

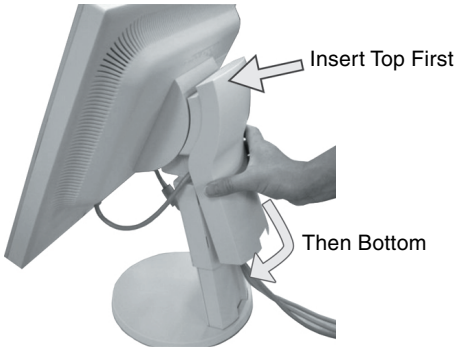

Figure D.1

Figure D.2

10. Connect the power cord to the power outlet (**Figure E.1**).

NOTE: If you have difficulty removing the cable cover, please push the lower opening upward to remove it, as show in **Figure E.2**.

NOTE: Please refer to **Caution** section of this manual for proper selection of AC power cord.

11. The vacation switch on the back side of the monitor must be turned on (**Figure E.1**). Turn on the monitor with the front power button and the computer.

NOTE: The vacation switch is a true on/off switch. If this switch is on the OFF position, the monitor cannot be turned on using the front button. DO NOT switch on/off repeatedly.

12. No-Touch Auto Adjust automatically adjusts the monitor to optimal settings upon initial setup for most timings. For further adjustments, use the following OSM controls:
    - Auto Adjust Contrast (Analog input only)
    - Auto Adjust (Analog input only)

    Refer to the **Controls** section of this User's Manual for a full description of these OSM controls.

NOTE: If you have any problems, please refer to the **Troubleshooting** section of this User's Manual.

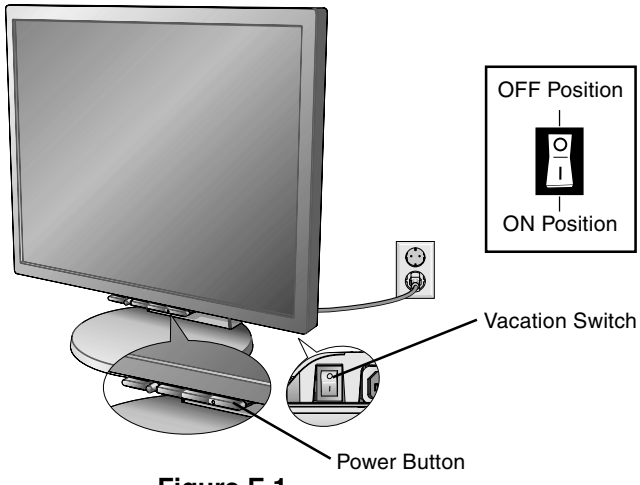

Figure E.1

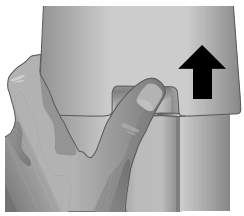

Figure E.2

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Raise and Lower Monitor Screen

The monitor may be raised or lowered. To raise or lower screen, place hands on each side of the monitor and lift or lower to the desired height (**Figure RL.1**).

NOTE: Handle with care when raising or lowering the monitor screen.

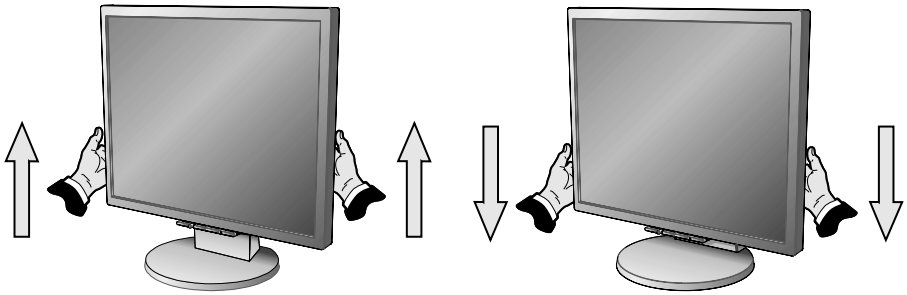


Figure RL.1

Tilt and Swivel

Grasp both sides of the monitor screen with your hands and adjust the tilt and swivel as desired (**Figure TS.1**).

NOTE: Handle with care when tilting and swivelling the monitor screen.

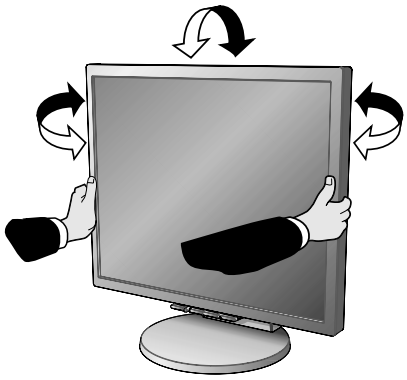


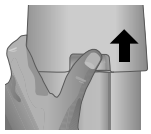
Figure TS.1

Remove Monitor Stand for Mounting

To prepare the monitor for alternate mounting purposes:

1. Place hands on each side of the monitor and lift up to the highest position. Remove the cable cover (**Figure S.1**).

NOTE: If you have difficulty removing the cable cover, please push the lower opening upward to remove it, as shown in the figure beside.



2. Disconnect all cables.
3. Place monitor face down on a non-abrasive surface (**Figure S.2**).

NOTE: Handle with care when monitor facing down, for avoiding the damage to the front buttons.

4. Remove the 2 screws connecting the stand to the monitor (**Figure S.2**).

Figure S.1

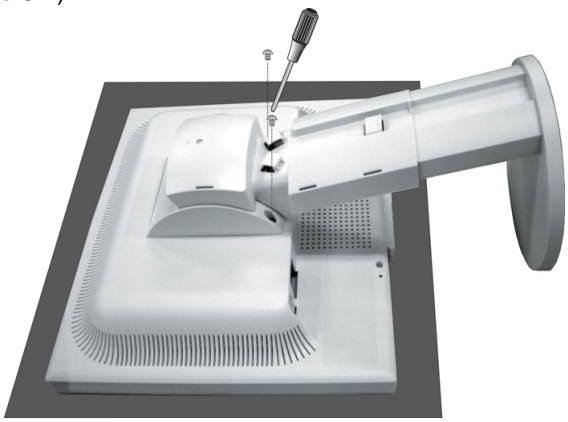


Figure S.2

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5. Lift up the stand to unlatch the upper hooks and remove the stand (**Figure S.3**).
6. Remove the 2 screws on the top of the monitor (**Figure S.4**). The monitor is now ready for mounting in an alternate manner.
7. Connect the cables to the back of the monitor.
8. Reverse this process to re-attach stand.

NOTE: Use only VESA-compatible alternative mounting method.
Handle with care when removing stand.

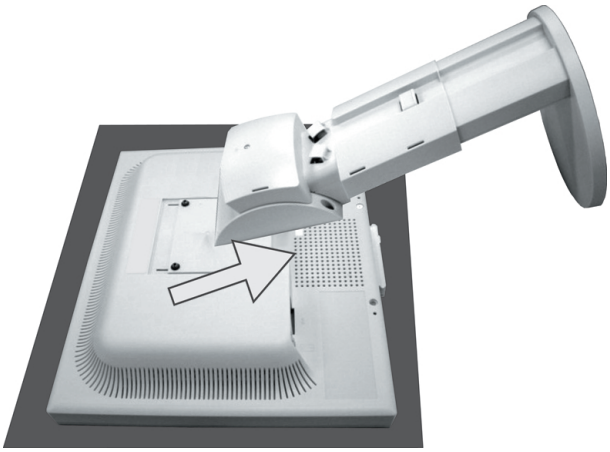

Figure S.3

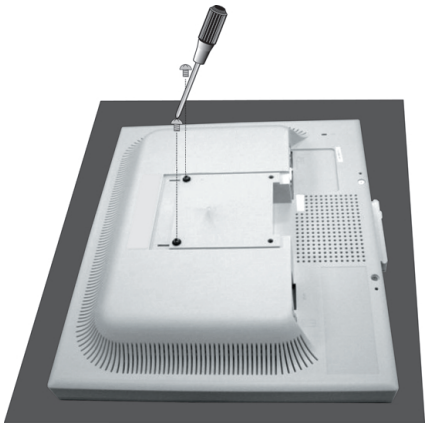

Figure S.4

Flexible Arm Installation

This LCD monitor is designed for use with a flexible arm. To mount the monitor to a flexible arm:

1. Follow the instructions on how Remove Monitor Stand for Mounting to remove the stand.
2. Using the 4 screws from the stand removal and attach the arm to the monitor (**Figure F.1**).

NOTE: The LCD monitor should only be used with an approved arm (e.g. GS mark). To meet the safety requirements, the monitor must be mounted to an arm, which guaranties the necessary stability under consideration of the weight of the monitor.

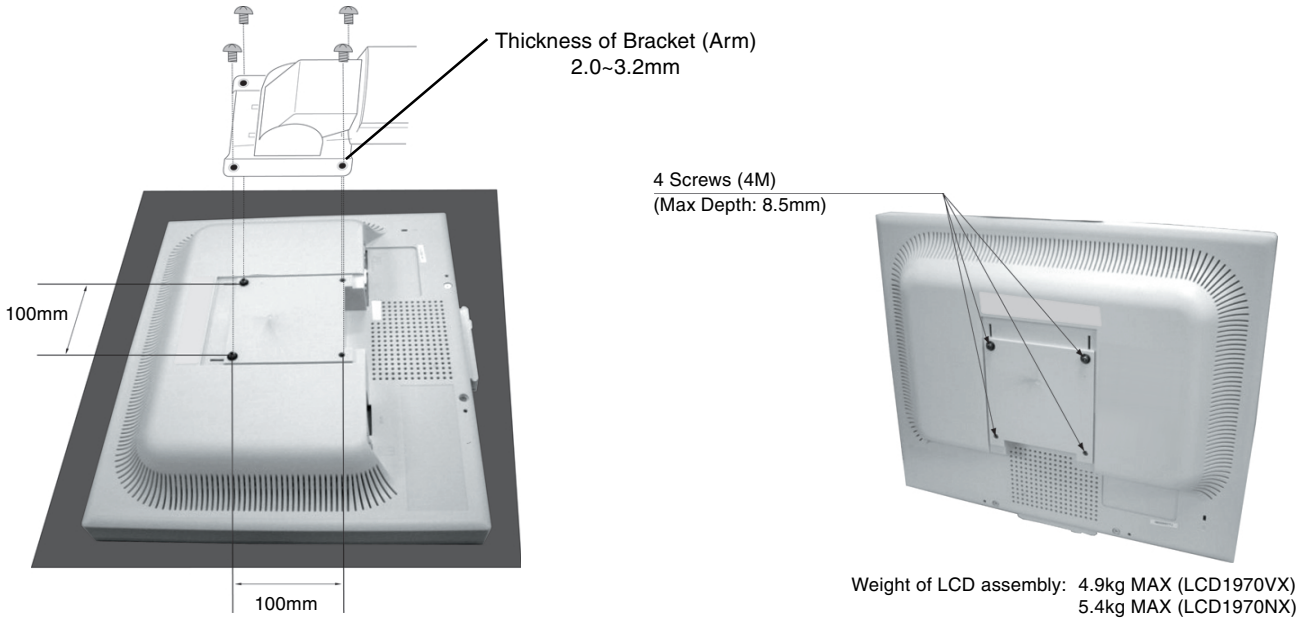

Figure F.1

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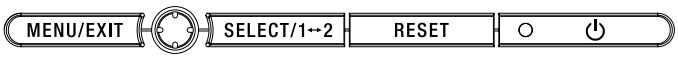
Controls

OSM (On-Screen Manager) control buttons on the front of the monitor function as follows:

To access OSM menu, press any of the control buttons (MENU/EXIT, Left, Right, Down, Up).
To change signal input, press the SELECT button.
To change DV MODE, press the RESET button.

NOTE: OSM must be closed in order to change signal input.



Button	Menu
MENU/EXIT	Open OSM main menu. Exits the OSM controls. Exits to the OSM main menu.
4-Direction-Key	Up Left Right Down
Left/Right	Moves the highlighted area left/right to select control menus. Moves the bar left/right to increase or decrease the adjustment.
Down/Up	Moves the highlighted area down/up to select one of the controls.
SELECT	Active Auto Adjust function. Enter the OSM sub menu.
RESET	Resets the highlighted control menu to the factory setting.

NOTE: When **RESET** is pressed in the main and sub-menu, a warning window will appear allowing you to cancel the **RESET** function by pressing the MENU/EXIT button.

Brightness/Contrast Controls

BRIGHTNESS
Adjusts the overall image and background screen brightness.

CONTRAST
Adjusts the image brightness in relation to the background.

DV MODE
Alows you to select the suitable setting for Movie, Picture and etc.

AUTO CONTRAST (Analog input only)
Adjusts the image displayed to optimal settings.

Auto Adjust (Analog input only)

Automatically adjusts the Image Position, H. Size and Fine settings.

Image Controls (Analog input only)

LEFT / RIGHT
Controls Horizontal Image Position within the display area of the LCD.

DOWN / UP
Controls Vertical Image Position within the display area of the LCD.

H.SIZE
Adjusts the horizontal size by increasing or decreasing this setting.

FINE
Improves focus, clarity and image stability by increasing or decreasing this setting.

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Colour Control System

Colour Control System: Six colour presets select the desired colour setting (sRGB and NATIVE colour presets are standard and cannot be changed).

R,G,B: Increases or decreases Red, Green or Blue colour depending upon which is selected. The change in colour will appear on screen and the direction (increase or decrease) will be shown by the bars.

NATIVE: Original colour presented by the LCD panel that is unadjustable.

sRGB: sRGB mode dramatically improves the colour fidelity in the desktop environment by a single standard RGB colour space. With this colour supported environment, the operator could easily and confidently communicate colour without further colour management overhead in the most common situations.

Tools

OFF TIMER: Monitor will automatically power-down when the end user has selected a predetermined amount of time.

HOT KEY: You can adjust the brightness and contrast directly. When this function is set to ON, you can adjust the brightness with left or right control and contrast with up or down control while the OSM menu is off.

FACTORY PRESET: Selecting Factory Preset allows you to reset all OSM control settings back to the factory settings. The RESET button will need to be held down for several seconds to take effect. Individual settings can be reset by highlighting the control to be reset and pressing the RESET button.

Menu Tools

LANGUAGE: OSM control menus are available in eight languages.

OSM LEFT/RIGHT: You can choose where you would like the OSM control image to appear horizontally on your screen.

OSM DOWN/UP: You can choose where you would like the OSM control image to appear vertically on your screen.

OSM Turn Off: The OSM control menu will stay on as long as it is in use. In the OSM Turn Off submenu, you can select how long the monitor waits after the last touch of a button to shut off the OSM control menu.

OSM Lock Out: This control completely locks out access to all OSM control functions without Brightness and Contrast. When attempting to activate OSM controls while in the Lock Out mode, a screen will appear indicating the OSM controls are locked out. To activate the OSM Lock Out function, press SELECT, then right control button and hold down simultaneously. To deactivate the OSM Lock Out, press SELECT, then left control button and hold down simultaneously while in the OSM menu.

RESOLUTION NOTIFIER: This optimal resolution is 1280 x 1024. If ON is selected, a message will appear on the screen after 30 seconds, notifying you that the resolution is not at 1280 x 1024.

Information

The Information menu indicates the current input, display resolution, horizontal and vertical frequency, and polarity settings of the monitor. The model and serial numbers of your monitor are also indicated.

OSM Warning

OSM Warning menus disappear with Exit button.

NO SIGNAL: This function gives a warning when there is no Horizontal or Vertical Sync. After power is turned on or when there is a change of input signal, the **No Signal** window will appear.

RESOLUTION NOTIFIER: This function gives a warning of use with optimized resolution. After power is turned on or when there is a change of input signal or the video signal doesn't have proper resolution, the **Resolution Notifier** window will open. This function can be disabled in the Menu Tools.

OUT OF RANGE: When input signal is non-supported timing or the video signal doesn't have proper timing, the **Out of Range** menu will appear.

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Recommended use

Safety Precautions and Maintenance

FOR OPTIMUM PERFORMANCE, PLEASE NOTE
THE FOLLOWING WHEN SETTING UP AND USING
THE MULTISYNC LCD COLOUR MONITOR:

- **DO NOT OPEN THE MONITOR.** There are no user serviceable parts inside and opening or removing covers may expose you to dangerous shock hazards or other risks. Refer all servicing to qualified service personnel.
- Do not spill any liquids into the cabinet or use your monitor near water.
- Do not insert objects of any kind into the cabinet slots, as they may touch dangerous voltage points, which can be harmful or fatal or may cause electric shock, fire or equipment failure.
- Do not place any heavy objects on the power cord. Damage to the cord may cause shock or fire.
- Do not place this product on a sloping or unstable cart, stand or table, as the monitor may fall, causing serious damage to the monitor.
- Do not place any objects onto the monitor and do not use the monitor outdoors.
- The inside of the fluorescent tube located within the LCD monitor contains mercury.
  Please follow the bylaws or rules of your municipality to dispose of the tube properly.
- Do not bend power cord.
- Do not use monitor in high temperatured, humid, dusty, or oily areas.
- Do not cover vent on monitor.

Immediately unplug your monitor from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- When the power supply cord or plug is damaged.
- If liquid has been spilled, or objects have fallen into the monitor.
- If the monitor has been exposed to rain or water.
- If the monitor has been dropped or the cabinet damaged.
- If the monitor does not operate normally by following operating instructions.
- If glass is broken, handle with care.
- If monitor or glass is broken, do not come in contact with the liquid crystal and handle with care.

CAUTION

- Allow adequate ventilation around the monitor so that heat can properly dissipate. Do not block ventilated openings or place the monitor near a radiator or other heat sources. Do not put anything on top of monitor.
- The power cable connector is the primary means of detaching the system from the power supply. The monitor should be installed close to a power outlet which is easily accessible.
- Handle with care when transporting. Save packaging for transporting.

- **Image Persistence:** Please be aware that LCD Technology may experience a phenomenon known as Image Persistence. Image Persistence occurs when a residual or “ghost” image of a previous image remains visible on the screen. Unlike CRT monitors, LCD monitors’ image persistence is not permanent, but constant images being displayed for a long period of time should be avoided. To alleviate image persistence, turn off the monitor for as long as the previous image was displayed. For example, if an image was on the monitor for one hour and a residual image remains, the monitor should be turned off for one hour to erase the image.

  NOTE: As with all personal display devices, NEC DISPLAY SOLUTIONS recommends displaying moving images and using a moving screen saver at regular intervals whenever the screen is idle or turning off the monitor when not in use.

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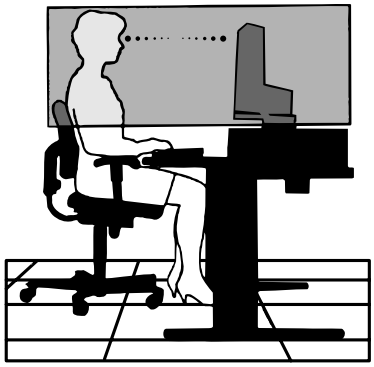
CORRECT PLACEMENT AND ADJUSTMENT OF THE MONITOR CAN REDUCE EYE, SHOULDER AND NECK FATIGUE. CHECK THE FOLLOWING WHEN YOU POSITION THE MONITOR:



- For optimum performance, allow 20 minutes for warm-up.
- Adjust the monitor height so that the top of the screen is at or slightly below eye level. Your eyes should look slightly downward when viewing the middle of the screen.
- Position your monitor no closer than 40 cm and no further away than 70 cm from your eyes. The optimal distance is 50 cm.
- Rest your eyes periodically by focusing on an object at least 20 feet away. Blink often.
- Position the monitor at a 90° angle to windows and other light sources to minimize glare and reflections. Adjust the monitor tilt so that ceiling lights do not reflect on your screen.
- If reflected light makes it hard for you to see your screen, use an anti-glare filter.
- Adjust the monitor's brightness and contrast controls to enhance readability.
- Use a document holder placed close to the screen.
- Position whatever you are looking at most of the time (the screen or reference material) directly in front of you to minimize turning your head while you are typing.
- Avoid displaying fixed patterns on the monitor for long periods of time to avoid image persistence (after-image effects).
- Get regular eye checkups.

Ergonomics

To realize the maximum ergonomics benefits, we recommend the following:

- Adjust the Brightness until the background raster disappears.
- Do not position the Contrast control to its maximum setting.
- Use the preset Size and Position controls with standard signals.
- Use the preset Colour Setting.
- Use non-interlaced signals with a vertical refresh rate between 60-75 Hz.
- Do not use primary colour blue on a dark background, as it is difficult to see and may produce eye fatigue to insufficient contrast.

Cleaning the LCD Panel

- When the liquid crystal panel is stained with dust or dirt, please wipe with soft cloth gently.
- Please do not rub the LCD panel with hard material.
- Please do not apply pressure to the LCD surface.
- Please do not use OA cleaner it will cause deterioration or discolor on the LCD surface.

Cleaning the Cabinet

- Unplug the power supply
- Gently wipe the cabinet with a soft cloth
- To clean the cabinet, dampen the cloth with a neutral detergent and water, wipe the cabinet and follow with a dry cloth.

NOTE: Many plastics are used on the surface of the cabinet. DO NOT clean with benzene, thinner, alkaline detergent, alcoholic system detergent, glass cleaner, wax, polish cleaner, soap powder, or insecticide. Do not touch rubber or vinyl to the cabinet for a long time. These types of fluids and fabrics can cause the paint to deteriorate, crack or peel.

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Specifications for LCD1970VX

Monitor Specifications		MultiSync LCD1970VX Monitor	Notes
LCD Module	Diagonal: Viewable Image Size: Native Resolution (Pixel Count):	48.2 cm/19.0 inches 48.2 cm/19.0 inches 1280 x 1024	Active matrix; thin film transistor (TFT) liquid crystal display (LCD); 0.294 mm dot pitch; 250 cd/m^2 white luminance; 550:1 contrast ratio, typical.
Input Signal	Video: Sync:	ANALOG 0.7 Vp-p/75 Ohms Separate sync.TTL Level Horizontal sync. Positive/Negative Vertical sync. Positive/Negative Composite sync. Positive/Negative*2 Sync on Green (Video 0.7 Vp-p and Sync. 0.3 Vp-p)*2	Digital Input: DVI
Display Colours		16,777,216	Depends on display card used.
Synchronization Range	Horizontal: Vertical:	31.5 kHz to 81.1 kHz (Analog) 31.5 kHz to 81.1 kHz (Digital) 56.0 Hz to 75.0 Hz	Automatically Automatically Automatically
Viewing Angle	Left/Right: Up/Down:	80°/80° (CR > 5) 80°/80° (CR > 5)	
Resolutions Supported		720 x 400*1 : VGA-Text 640 x 480*1 at 60 Hz to 75 Hz 800 x 600*1 at 56 Hz to 75 Hz 832 x 624*1 at 75 Hz 1024 x 768*1 at 60 Hz to 75 Hz 1152 x 870*1 at 75 Hz 1280 x 1024 at 60 Hz to 75 Hz.....	Some systems may not support all modes listed. NEC DISPLAY SOLUTIONS cites recommended resolution at 60 Hz for optimal display performance.
Active Display Area	Horizontal: Vertical:	376.3 mm/14.8 inches 301.1 mm/11.9 inches	
Power Supply		AC 100-240V ~ 50/60Hz	
Power Consumption (without optional Sound Bar)		36W (typ)	
Current Rating		0.65-0.35A	
Dimensions		412.5 mm (W) x 386.5-496.5 mm (H) x 220.0 mm (D) 16.2 inches (W) x 15.2-19.5 inches (H) x 8.7 inches (D)	
Weight	Net: Gross:	7.6 kg (16.8 lbs) 9.9 kg (21.8 lbs)	
Environmental Considerations			
	Operating Temperature: Humidity: Feet: Storage Temperature: Humidity: Feet:	5°C to 35°C/41°F to 95°F 30% to 80% 0 to 10,000 Feet -10°C to 60°C/14°F to 140°F 10% to 85% 0 to 30,000 Feet	

*1 Interpolated Resolutions: When resolutions are shown that are lower than the pixel count of the LCD module, text may appear different. This is normal and necessary for all current flat panel technologies when displaying non-native resolutions full screen. In flat panel technologies, each dot on the screen is actually one pixel, so to expand resolutions to full screen, an interpolation of the resolution must be done.
*2 If your display is not showing a picture of the SOG and Composite Sync. Signal, please contact our hotline for further assistance.

NOTE: Technical specifications are subject to change without notice.

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Specifications for LCD1970NX

Monitor Specifications		MultiSync LCD1970NX Monitor	Notes
LCD Module	Diagonal:	48.2 cm/19.0 inches	Active matrix; thin film transistor (TFT) liquid crystal display (LCD); 0.294 mm dot pitch; 250 cd/m²*3 white luminance; 800:1 contrast ratio, typical.
	Viewable Image Size:	48.2 cm/19.0 inches	
	Native Resolution (Pixel Count):	1280 x 1024	
Input Signal	Video:	ANALOG 0.7 Vp-p/75 Ohms	Digital Input: DVI
	Sync:	Separate sync.TTL Level Horizontal sync. Positive/Negative Vertical sync. Positive/Negative Composite sync. Positive/Negative*2 Sync on Green (Video 0.7 Vp-p and Sync. 0.3 Vp-p)*2	
Display Colours		16,777,216	Depends on display card used.
Synchronization Range	Horizontal:	31.5 kHz to 81.1 kHz (Analog) 31.5 kHz to 81.1 kHz (Digital)	Automatically Automatically
	Vertical:	56.0 Hz to 75.0 Hz	Automatically
Viewing Angle	Left/Right:	88°/88° (CR > 10)	
	Up/Down:	88°/88° (CR > 10)	
Resolutions Supported		720 x 400*1 : VGA-Text 640 x 480*1 at 60 Hz to 75 Hz 800 x 600*1 at 56 Hz to 75 Hz 832 x 624*1 at 75 Hz 1024 x 768*1 at 60 Hz to 75 Hz 1152 x 870*1 at 75 Hz 1280 x 1024 at 60 Hz to 75 Hz.....	Some systems may not support all modes listed. NEC DISPLAY SOLUTIONS cites recommended resolution at 60 Hz for optimal display performance.
Active Display Area	Horizontal:	376.3 mm/14.8 inches	
	Vertical:	301.1 mm/11.9 inches	
Power Supply		AC 100-240V ~ 50/60Hz	
Power Consumption (without optional Sound Bar)		38W (typ)	
Current Rating		1.2-0.6A	
Dimensions		412.5 mm (W) x 386.5-496.5 mm (H) x 220.0 mm (D) 16.2 inches (W) x 15.2-19.5 inches (H) x 8.7 inches (D)	
Weight	Net:	8.1 kg (17.9 lbs)	
	Gross:	10.4 kg (22.9 lbs)	
Environmental Considerations			
	Operating Temperature:	5°C to 35°C/41°F to 95°F	
	Humidity:	30% to 80%	
	Feet:	0 to 10,000 Feet	
	Storage Temperature:	-10°C to 60°C/14°F to 140°F	
	Humidity:	10% to 85%	
	Feet:	0 to 40,000 Feet	

*1 Interpolated Resolutions: When resolutions are shown that are lower than the pixel count of the LCD module, text may appear different. This is normal and necessary for all current flat panel technologies when displaying non-native resolutions full screen. In flat panel technologies, each dot on the screen is actually one pixel, so to expand resolutions to full screen, an interpolation of the resolution must be done.
*2 If your display is not showing a picture of the SOG and Composite Sync. Signal, please contact our hotline for further assistance.
*3 LCD Module at 25°C.

NOTE: Technical specifications are subject to change without notice.

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Specifications for LCD1970NXp

Monitor Specifications		MultiSync LCD1970NXp Monitor	Notes
LCD Module	Diagonal: Viewable Image Size: Native Resolution (Pixel Count):	48.2 cm/19.0 inches 48.2 cm/19.0 inches 1280 x 1024	Active matrix; thin film transistor (TFT) liquid crystal display (LCD); 0.294 mm dot pitch; 250 cd/m^2 white luminance; 800:1 contrast ratio, typical.
Input Signal	Video: Sync:	ANALOG 0.7 Vp-p/75 Ohms Separate sync.TTL Level Horizontal sync. Positive/Negative Vertical sync. Positive/Negative Composite sync. Positive/Negative*2 Sync on Green (Video 0.7 Vp-p and Sync. 0.3 Vp-p)*2	Digital Input: DVI
Display Colours		16,777,216	Depends on display card used.
Synchronization Range	Horizontal: Vertical:	31.5 kHz to 81.1 kHz (Analog) 31.5 kHz to 81.1 kHz (Digital) 56.0 Hz to 75.0 Hz	Automatically Automatically Automatically
Viewing Angle	Left/Right: Up/Down:	88°/88° (CR > 10) 88°/88° (CR > 10)	
Resolutions Supported		720 x 400*1 : VGA-Text 640 x 480*1 at 60 Hz to 75 Hz 800 x 600*1 at 56 Hz to 75 Hz 832 x 624*1 at 75 Hz 1024 x 768*1 at 60 Hz to 75 Hz 1152 x 870*1 at 75 Hz 1280 x 1024 at 60 Hz to 75 Hz.....	Some systems may not support all modes listed. NEC DISPLAY SOLUTIONS cites recommended resolution at 60 Hz for optimal display performance.
Active Display Area	Horizontal: Vertical:	376.3 mm/14.8 inches 301.1 mm/11.9 inches	
Power Supply		AC 100-240V ~ 50/60Hz	
Power Consumption (without optional Sound Bar)		38W (typ)	
Current Rating		1.2-0.6A	
Dimensions		412.5 mm (W) x 386.5-496.5 mm (H) x 220.0 mm (D) 16.2 inches (W) x 15.2-19.5 inches (H) x 8.7 inches (D)	
Weight	Net: Gross:	8.0 kg (17.7 lbs) 10.3 kg (22.7 lbs)	
Environmental Considerations			
	Operating Temperature: Humidity: Feet: Storage Temperature: Humidity: Feet:	5°C to 35°C/41°F to 95°F 30% to 80% 0 to 10,000 Feet -10°C to 60°C/14°F to 140°F 10% to 85% 0 to 30,000 Feet	

*1 Interpolated Resolutions: When resolutions are shown that are lower than the pixel count of the LCD module, text may appear different. This is normal and necessary for all current flat panel technologies when displaying non-native resolutions full screen. In flat panel technologies, each dot on the screen is actually one pixel, so to expand resolutions to full screen, an interpolation of the resolution must be done.
*2 If your display is not showing a picture of the SOG and Composite Sync. Signal, please contact our hotline for further assistance.

NOTE: Technical specifications are subject to change without notice.

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Features

Thin-frame design creates more desktop space for you to work and play, while the flat screen's crisp, bright images and crystal-clear text deliver a comfortable viewing experience.

No Touch Auto Adjust automatically adjusts your optimal image settings upon initial power-on.

Colour Control System allows you to change between six colour settings on your display to match your personal preference.

Redesigned OSM controls allow you to quickly and easily adjust all elements of your screen image.

NaViSet software offers an expanded and intuitive graphical interface, allowing you to more easily adjust OSM display settings via mouse and keyboard.

Height adjustable stand with tilt, swivel and cable management adds flexibility to your viewing preferences.

The flat screen's crisp, bright images and crystal-clear text deliver a comfortable viewing experience.

ErgoDesign Features: Enhance human ergonomics to improve the working environment, protect the health of the user and save money. Examples include OSM controls for quick and easy image adjustments, tilt base for preferred angle of vision, small footprint and compliance with MPRII and TCO guidelines for lower emissions.

Plug and Play: The Microsoft® solution with the Windows® 95/98/Me/2000/XP operating system facilitates setup and installation by allowing the monitor to send its capabilities (such as screen size and resolutions supported) directly to your computer, automatically optimizing display performance.

IPM (Intelligent Power Manager) System: Provides innovative power-saving methods that allow the monitor to shift to a lower power consumption level when on but not in use, saving two-thirds of your monitor energy costs, reducing emissions and lowering the air conditioning costs of the workplace.

Multiple Frequency Technology: Automatically adjusts monitor to the display card's scanning frequency, thus displaying the resolution required.

FullScan Capability: Allows you to use the entire screen area in most resolutions, significantly expanding image size.

VESA Standard Mounting Interface: Allows users to connect their MultiSync monitor to any VESA standard third party mounting arm or bracket. Allows for the monitor to be mounted on a wall or an arm using any third party compliant device.

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Troubleshooting

No picture

- The signal cable should be completely connected to the display card/computer.
- The display card should be completely seated in its slot.
- Check the Vacation Switch should be in the ON position.
- Front Power Switch and computer power switch should be in the ON position.
- Check to make sure that a supported mode has been selected on the display card or system being used. (Please consult display card or system manual to change graphics mode.)
- Check the monitor and your display card with respect to compatibility and recommended settings.
- Check the signal cable connector for bent or pushed-in pins.

Power Button does not respond

- Unplug the power cord of the monitor from the AC outlet to turn off and reset the monitor.
- Check the Vacation Switch on the back side of the monitor.

Image Persistence

- Please be aware that LCD Technology may experience a phenomenon known as Image Persistence. Image Persistence occurs when a residual or “ghost” image of a previous image remains visible on the screen. Unlike CRT monitors, LCD monitors’ image persistence is not permanent, but constant images being displayed for a long period of time should be avoided. To alleviate image persistence, turn off the monitor for as long as the previous image was displayed. For example, if an image was on the monitor for one hour and a residual image remains, the monitor should be turned off for one hour to erase the image.

NOTE: As with all personal display devices, NEC DISPLAY SOLUTIONS recommends displaying moving images and using a moving screen saver at regular intervals whenever the screen is idle or turning off the monitor when not in use.

Image is unstable, unfocused or swimming is apparent

- Signal cable should be completely attached to the computer.
- Use the OSM Image Adjust controls to focus and adjust display by increasing or decreasing the fine total. When the display mode is changed, the OSM Image Adjust settings may need to be re-adjusted.
- Check the monitor and your display card with respect to compatibility and recommended signal timings.
- If your text is garbled, change the video mode to non-interlace and use 60Hz refresh rate.

LED on monitor is not lit (no green or amber colour can be seen)

- Power Switch should be in the ON position and power cord should be connected.
- Check the Vacation Switch should be in the ON position.

Display image is not sized properly

- Use the OSM Image Adjust controls to increase or decrease the H. SIZE.
- Check to make sure that a supported mode has been selected on the display card or system being used. (Please consult display card or system manual to change graphics mode.)

No Video

- If no video is present on the screen, turn the vacation switch off and on again.
- Make certain the computer is not in a power-saving mode (touch the keyboard or mouse).

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TCO Development

Congratulations!

The display you have just purchased carries the TCO’03 Displays label. This means that your display is designed, manufactured and tested according to some of the strictest quality and environmental requirements in the world. This makes for a high performance product, designed with the user in focus that also minimizes the impact on our natural environment.

Some of the features of the TCO’03 Display requirements:

Ergonomics

- Good visual ergonomics and image quality in order to improve the working environment for the user and to reduce sight and strain problems. Important parameters are luminance, contrast, resolution, reflectance, colour rendition and image stability.

Energy

- Energy-saving mode after a certain time – beneficial both for the user and the environment
- Electrical safety

Emissions

- Electromagnetic fields
- Noise emissions

Ecology

- The product must be prepared for recycling and the manufacturer must have a certified environmental management system such as EMAS or ISO 14 001.
- Restrictions on:
  - chlorinated and brominated flame retardants and polymers
  - heavy metals such as cadmium, mercury and lead.

The requirements included in this label have been developed by TCO Development in co-operation with scientists, experts, users as well as manufacturers all over the world. Since the end of the 1980s TCO has been involved in influencing the development of IT equipment in a more user-friendly direction. Our labelling system started with displays in 1992 and is now requested by users and IT-manufacturers all over the world.

For more information, please visit
www.tcodevelopment.com

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Manufacturer's Recycling and Energy Information

NEC DISPLAY SOLUTIONS is strongly committed to environmental protection and sees recycling as one of the company's top priorities in trying to minimize the burden placed on the environment. We are engaged in developing environmentally-friendly products, and always strive to help define and comply with the latest independent standards from agencies such as ISO (International Organisation for Standardization) and TCO (Swedish Trades Union).

For more information, and for help in recycling your old NEC monitors, please visit our website at

http://www.nec-display-solutions.com (in Europe) or

http://www.nec-display.com (in Japan) or

http://www.necdisplay.com (in USA).

Country-specific recycling programmes can also be found at:

Sweden - http://www.el-retur.se

Germany - http://www.recyclingpartner.de/

Holland - http://www.mirec.nl/

Japan - http://www.diarcs.com/

Energy saving:

This monitor features an advanced energy saving capability. When a VESA Display Power Management Signaling (DPMS) Standard signal is sent to the monitor, the Energy Saving mode is activated. The monitor enters a single Energy Saving mode.

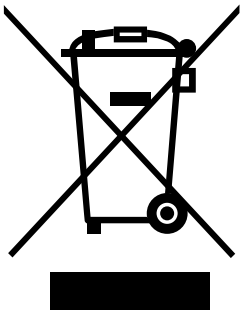
LCD1970VX

Mode	Power consumption	LED colour
Normal Operation	Approx. 36W	Green
Energy Saving Mode	Less than 2W	Amber
Off Mode	Less than 1W	Unlit

LCD1970NX/NXp

Mode	Power consumption	LED colour
Normal Operation	Approx. 38W	Green
Energy Saving Mode	Less than 2W	Amber
Off Mode	Less than 1W	Unlit

Disposing of your old NEC product



Within the European Union

EU-wide legislation, as implemented in each Member State, requires that waste electrical and electronic products carrying the mark (left) must be disposed of separately from normal household waste. This includes monitors and electrical accessories, such as signal cables or power cords. When you need to dispose of your NEC display products, please follow the guidance of your local authority, or ask the shop where you purchased the product, or if applicable, follow any agreements made between yourself and NEC.

The mark on electrical and electronic products only applies to the current European Union Member States.

Outside the European Union

If you wish to dispose of used electrical and electronic products outside the European Union, please contact your local authority so as to comply with the correct disposal method.

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